D0 Status Report
3/14/2005

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Data Taking for 3/7 – 3/13

Day	Delivered	Recorded	Eff.	Comments
3/7 (Mon)	3.179 pb^{-1}	2.815 pb^{-1}	88.5 %	24 min downtime due to muon, 20 min downtime due to PDT135
3/8 (Tue)	0.824 pb^{-1}	0.736 pb^{-1}	89.3 %	Controlled access to repair PDT 135, visual inspection of control dewar Commissioning work on Run IIb L1Cal started
3/9 (Wed)				
3/10 (Thu)	0.707 pb^{-1}	0.435 pb^{-1}	61.5 %	40 min downtime due to a bad HDI
3/11 (Fri)	1.008 pb^{-1}	0.922 pb^{-1}	91.5 %	
3/12 (Sat)	2.526 pb^{-1}	2.315 pb^{-1}	91.6 %	Calorimeter calib trigger added
3/13 (Sun)	3.438 pb^{-1}	3.043 pb^{-1}	88.5 %	32 min downtime due to a bad HDI 2^{nd} best in recorded lum

3/7 – 3/13	11.68 pb^{-1}	10.27 pb^{-1}	87.9 %	

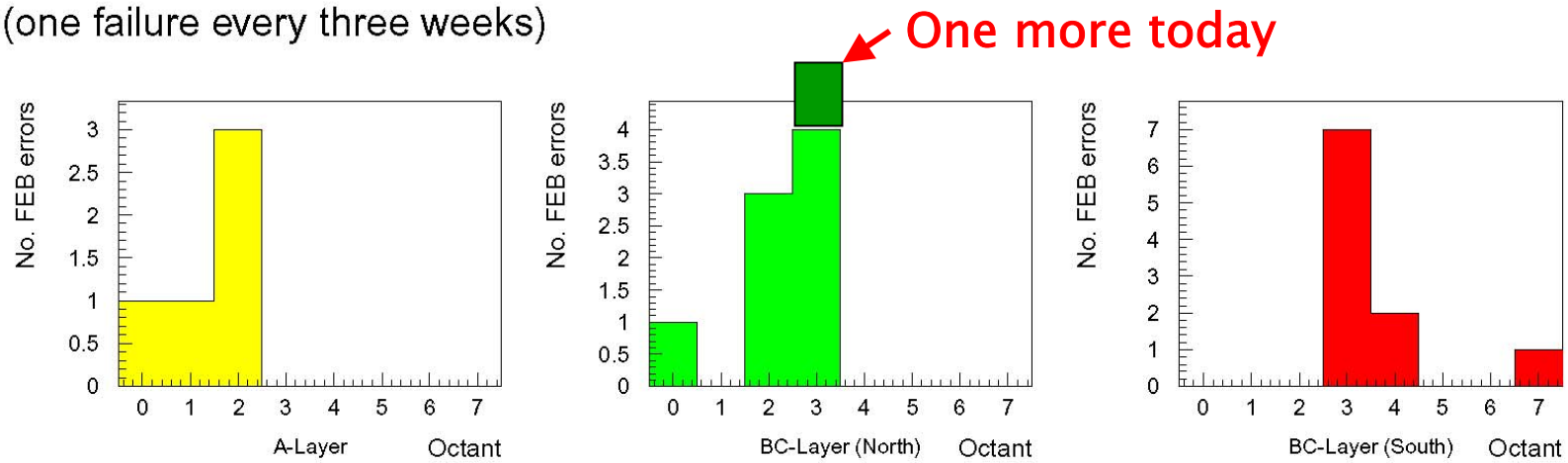
Beam Loss During Squeeze

- No significant reduction in the loss.
  - There seems to be a small reduction, after "propagating ½ alpha bumps back to seq 24".
- We lost a muon PDT front-end board at the beginning of store 4043 today.

PDT Frontendboard Failures

We have observed PDT frontendboard failures with the same symptoms over a long time
(a hole burned in a chip ↔ radiation?! — "readpointer error" — causing four dead cells)

Statistics of FEB failures with readpointer errors, 2002-present
(one failure every three weeks)

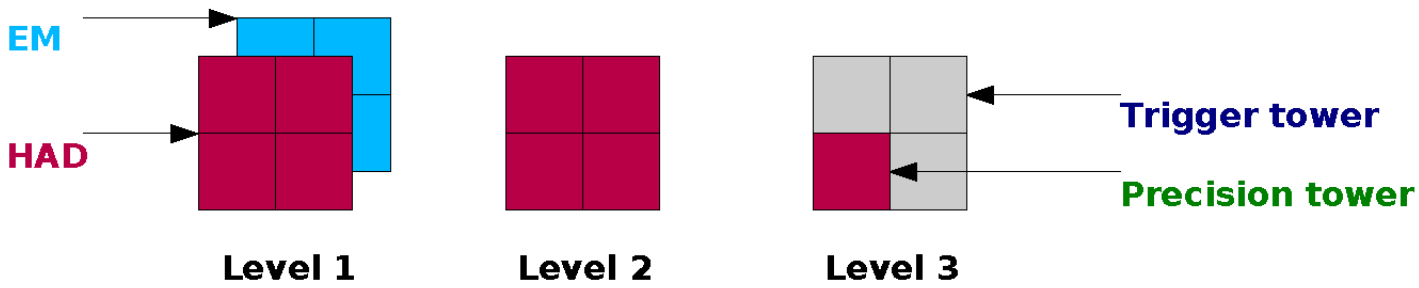


⇒ only few failures in A-Layer — B-/C-Layer: Significant peaks on the West Side / octant three

Possible solution: Power down selected PDTs during scraping
Downside: interrupt DØ data taking for ≈ 1/2 hour at begin of the store
Do the test: compare (small but constant) effect on PDTs and effects for other systems

Calibration of Hadronic Calorimeter

- Use approach similar to that adopted for EM calorimeter
- Developed new trigger, will be used during normal data taking (trigger list V13.60)
  - Level 1: require CJT(1,5) (5 GeV in EM+HAD)
  - Level 2: require 5 GeV in the hadronic section of the trigger tower (new code in L2)
  - Level 3: require a precision tower with E_T>7 GeV matched to the trigger tower

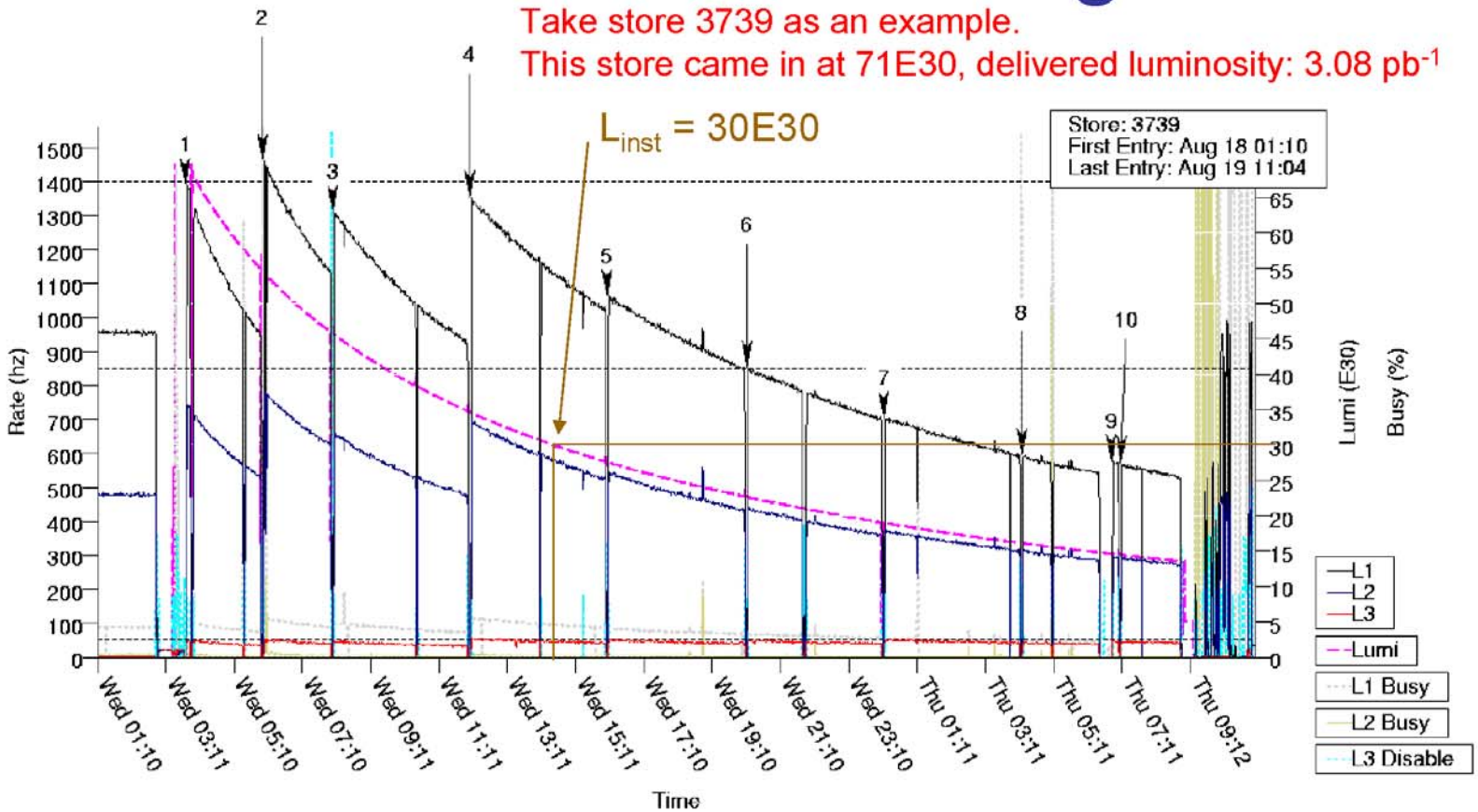


- Trigger tested offline on CJT(1,5) triggers, reduction 4.5 at Level 2, 12 at Level 3

Parasitic data taking ?

Take store 3739 as an example.

This store came in at 71E30, delivered luminosity: 3.08 pb^{-1}



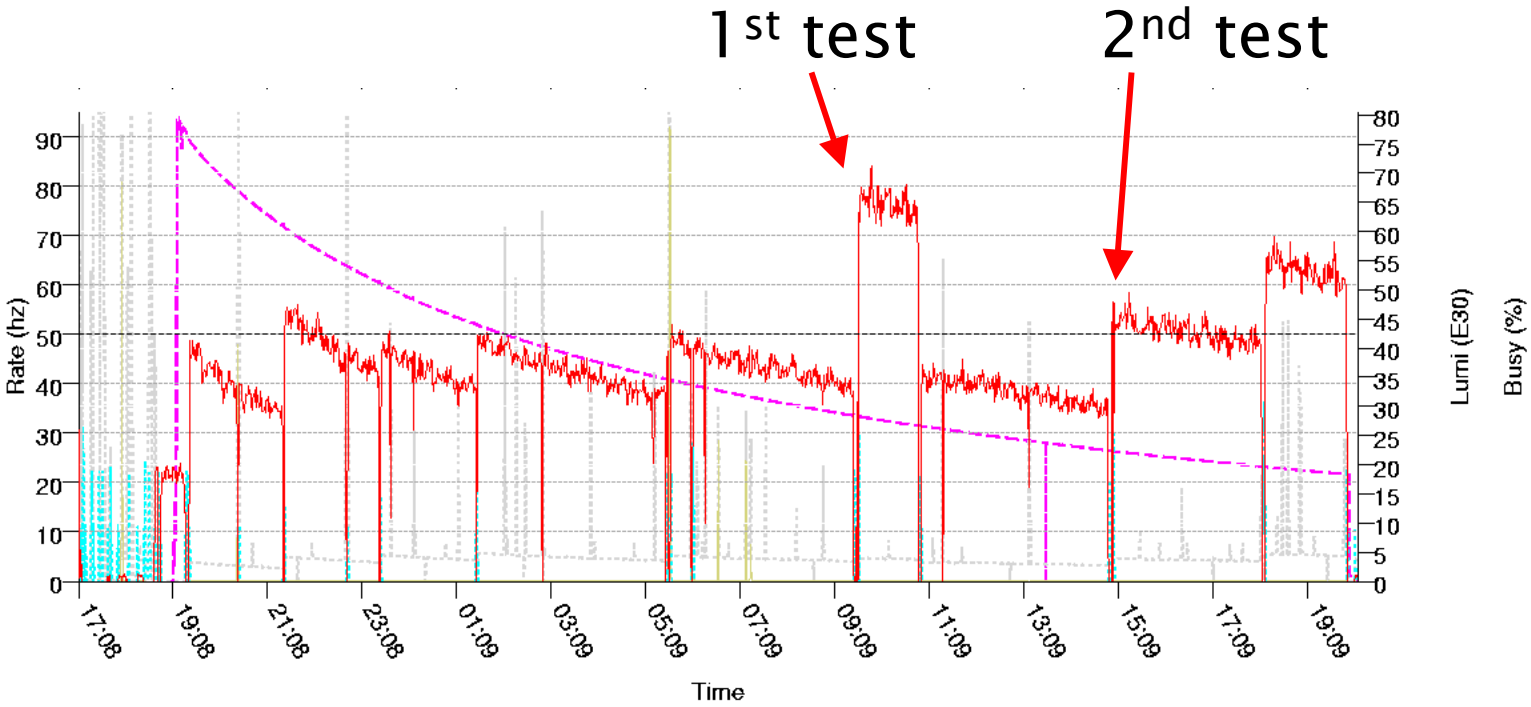
At instantaneous luminosities below 30E30, we have some room at L1 and L2.

Idea: squeeze in triggers to take data for phi intercalibration.

Time in store at instantaneous luminosities below 30E30: 18 hours

Hadronic Calorimeter Calibration Trigger

Used calorimeter calibration trigger when the lum is low and there is extra bandwidth available.



Summary

- We ran reasonably well.
  - Efficiency was 87.9 %.
  - We can do better. Occasional 30 min downtimes are significant contributors to our inefficiency.
    - Improve shifter training and instructions.
- Recorded luminosity on 3/13 (Sun) was the 2nd best in Run II.
- Beam loss at the squeeze is still an issue.
- Running calorimeter calibration trigger when the lum is low and there is extra bandwidth available.